

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0130413

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPERIMENTAL INVESTIGATION SHOWING THAT IN THE SWITCHING NUCLEUS OF THE THALAMUS THERE EXIST FUNCTIONALLY DIFFERENT TYPES OF NEURONS WHICH RECEIVE SIGNALS DIRECTLY FROM THE LEMNISCUS SYSTEM. THE ACTUAL SWITCHING CELLS ARE BREVIATENT NEURONS HAVING DIRECT CORTICAL PROJECTIONS INTO THE SOMATOSENSORY CORTICAL ZONES.

FACILITY: AKADEMIYA MEDITSINSKIKH NAUK SSSR, INSTITUT NORMAL'NOI I PATOLOGICHESKOI FIZIOLOGII, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 612.84.1/617.721.6+612.842.67-085.835.3-073

CHERKASOV, I. S., Doctor of Medical Sciences, SHIBINSKAYA, N. I., Docent,
 KOBOZEVA, O. I., Candidate of Medical Sciences, RADKOVSKAYA, A. YA., and
 IL'YASHENKO, A. P., Physician, Chair of Eye Diseases, Odessa Medical Institute
 and Basseyanova Hospital for Mariners

"Hydrodynamics of the Eye and Vascular Pressure in Healthy Man During Hyper-
 baric Oxygenation"

Odessa, Oftal'mologicheskiy Zhurnal, No 8, 1971, pp 575-577

Abstract: The investigation was performed on 10 healthy subjects aged 18-34, in a 4.5 m³ pressure chamber which was continuously ventilated to maintain oxygen concentration at 40-60% under conditions of normal temperature, humidity and CO₂, and at a pressure of 2.5 atm. The following determinations and calculations were performed: tonography, blood pressure in the brachial artery and in the central artery of the retina, average dynamic arterial pressure, the retino-brachial coefficient, and the coefficient of Lobstein. The results revealed that hyperbaric oxygenation produces no significant changes in the hydro- and hemodynamics in the eyes of healthy individuals. A small decrease in intraocular fluid secretion and intraocular pressure occurred during exposure to 2.5 atm. After decompression, production of the intraocular fluid was increased somewhat due to a greater blood flow, but soon returned to normal.

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USSR

UDC 669.017.1.669.15-194.55

LANSKAYA, K. A., and KOCHEVA, Z. T.

"Martensitic-Aging Steels, Hardened by Intermetallic Phases NiAl and NiTi"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 11-18

Translation: Results are presented from a study of Cr-Mo-V martensitic-aging steel, alloyed with Ni, Al, and Ti. The austenite conversion is studied during continuous cooling at various rates. Phase chemical analysis, mechanical tests at room temperature and elevated temperatures, long-term strength tests, and thermal brittleness tests are performed. 3 figures; 2 tables; 2 biblio. refs.

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POLYADDITION REACTIONS OF SOME ORGANOVINYLCHLOROSILICON HYDRIDES
-U-
AUTHOR--(05)--KOBRAKOV, K.I., FEDOROV, L.A., KUZMIN, O.V., NAMETKIN, N.S.,
CHERNYSHEVA, T.I.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 18(3), 607-19 (CHEM)
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYMERIZATION, ORGANOSILICON COMPOUND, OLIGOMER, CHLORINATED
ORGANIC COMPOUND, DIMERIZATION, EPR SPECTRUM, CYCLOHEXANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0725 STEP NO--UR/0020/70/191/003/0607/0610
CIRC ACCESSION NO--AT0124395
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124395

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE POLYMN. OF MESI(CH:CH SUB2)CL, ETSI(CH:CH SUB2)CL, PHSI(CH:CH SUB2)CL, OR SI(CH:CH SUB2) CL SUB2 IN SEALED TUBES AT 100-50DEGREES IN THE PRESENCE OF H SUB2 PTCL SUB6.6H SUB2 O AND PT-C GAVE OLIGOMERS CONTG. ONLY (CHMESIRCL) SUBN (I) (R SI CL OR PH) STRUCTURES OR I AND (CH SUB2 CH SUB2 SIRCL) SUBN (II) (R SI ME OR ET) STRUCTURES. BESIDES I AND (OR) II (N IS 9-11) THE POLYMN. ALSO GAVE DIMERS SUCH AS 1,4,DICHLORO,1,4,DIMETHYL,1,4,DISILACYCLOHEXANE (III) OR 1,1,4,4,TETRAMETHYL,1,4,DISILACYCLOHEXANE (IV). EPR SPECTRA GAVE THE CONFORMATION OF III AND SHOWED THAT IV CONTAINS ISOMERIC 1,3,DICHLORO,1,2,3,TRIMETHYL,1,3,DISILACYCLOPENTANE. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ELECTROCHEMICAL STUDY OF INDIUM IONIZATION ON A ROTATING DISK
ELECTRODE -U-
AUTHOR-(03)-KOZIN, L.F., KOBRAND, YE.YE., SHEKA, I.A.
COUNTRY OF INFO--USSR
SOURCE--UKR. KHIM. ZH. 1970, 35(1) 22-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLUBILITY, ELECTROLYTIC OXIDATION, SULFURIC ACID, PERCHLORIC
ACID, ANODE POLARIZATION, INDIUM, ACTIVATION ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1335 STEP NO--UR/0073/70/036/001/0022/0029
CIRC ACCESSION NO--AP0107808
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107808

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANODIC DISSOLN. OF IN IN HClO
SUB4 AND H SUB2 SO SUB4 SOLNS. WAS STUDIED AT A ROTATING DISK ELECTRODE
BY MEANS OF CURRENT EFFICIENCY AND POLARIZATION CURVES. INDIUM FORMS IN
PRIME POSITIVE WITH AN ACTIVATION ENERGY OF 4 KCAL-MOLE AS THE PRIMARY
ACT. IN PRIME3 POSITIVE RESULTS FROM DISPROPORTIONATION OF IN PRIME
POSITIVE. THIS DISPROPORTIONATION TAKES PLACE CLOSER TO THE ELECTRODE
IN H SUB2 SO SUB4 SOLN. THAN IN HClO SUB4. THIS IS ATTRIBUTED TO STERIC
FACTORS IN THE DECOMP. OF IN SUB2 SO SUB4. AT HIGH H SUB2 SO SUB4
CONCNS. IN SUB2 SO SUB4 DECOMP. TO FORM IN SUB2 (SO SUB4) SUB3, S, AND H
SUB2 S.

UNCLASSIFIED

USSR

UDC 531.1

KOBRIN, A. I., and MARTYNYENKO, YU. G., Moscow

"One Method for Constructing an Asymptotic Solution of the Problem of the Motion of a Gyroscope in a Cardan Suspension"

Moscow, Mekhanika tverdogo tela, No 3, May/Jun 71, pp 40-47

Abstract: The classical nonlinear problem of the motion of a heavy gyroscope in a Cardan suspension is solved by constructing an asymptotic solution of systems of differential equations with a small parameter. The method was proposed by S. A. Lomov in a paper titled "A General Method for the Asymptotic Solution of Differential Equations" (V International Conference on Nonlinear Vibrations, Kiev, 1969). The notation and assumptions are those used in the book by Ye. L. Nikolay (Giroskop v Kardanovom podvese, Moscow, "Nauka", 1964). It is shown that the total and approximate solutions are very close over a finite time interval, with an accuracy up to terms of the order of μ^2 .

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USSR

UDC 621.874:624.023.9337:620.173.3.-974

KOBRIN, M. M., Candidate of Technical Sciences, FEDOROV, YU, K., Engineer,
ZINGERMAN, B. Z., Engineer, ZOTEYEV, V. S., Candidate of Technical Sciences, and
TYLKIN, M. A., Doctor of Technical Sciences

"Fatigue Strength of the Welded Beam Support Subassembly of Overhead Travelling
Cranes at Minus Temperatures"

Moscow, Vestnik Mashinostroyeniya, No 4, Apr 73, pp 16-19

Abstract: The authors determine the effect of low temperatures on the fatigue strength of the support subassemblies of welded metal structures with sharply varying cross sections. The jib of a 20-ton series produced travelling crane is studied. The beam is made from St3 grade steel and welded with the E42A electrodes. The bent sheet of the bottom band is welded to the vertical wall by a bilateral angular seam (10 mm fillet). Tests were conducted at +20 and -40°C on a hydraulic-pulsed testing machine including refrigeration equipment. The fatigue limits for the full scale beams of a travelling crane are determined by the interpolation method and are $\sigma=13.4$ kg/mm² for +20°C and $\sigma=11.3$ kg/mm² for -40°C.

USSR

KOBRIN, M. M., REZCHIKOV, A. S., ROYTSHEYN, M. M.

"Increasing the Fatigue Strength of Welded Elements in Prestressed Guy Structures"

III Mezhdunar. Konf. Po Predvarit. Napryazh. Metal. Konstruktsiyam., T. 3, [Third International Conference on Prestressed Metal Structures, Volume 3 -- Collection of Works], pp 130-140. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V1178 by Ya. M. Ayzenberg).

Translation: A description is presented of typical forms of bending of mechanical Guy parts. Changes are suggested in the design of equipment in order to increase the endurance and reliability under cyclical operating loads. Results are presented from experimental tests of the effectiveness of structures suggested and technological measures performed at the Central Scientific Research Institute of Structural Parts imeni V. A. Kucherenko. It is concluded that consideration of the actual operating conditions of structures during planning by shifting of welded seams to the least stressed areas, as well as strain hardening and working of seams can increase the reliability of mechanical parts in prestressed Guy structures significantly. The method suggested are recommended also for increasing the reliability of other types of prestressed structures.

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USSR

KOBRIN, R. Yu.

"The Problem of a Term"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet., Gor'kiy, 1967
[Selected Works of All-Union Interuniversity Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 372-375 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V768, by the author).

Translation: This article studies the problem of analysis of composite terms which are not produced in speech, but rather reproduced, indicated by the repetition of terminological word combinations in a sample of small volume. Quantitative criteria for reproducibility are suggested, characterizing the frequency distribution of terms in documents in an information file. The method described in the work can facilitate more precise definition of the concept "term" itself, and also may be used in the construction of information retrieval systems.

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USSR

UDC 547.781/.785

VOLODARSKIY, L. B., FUST, L. A., KOBRIN, V. S., Novosibirsk Institute of Organic Chemistry of the Siberian Department of the USST Academy of Sciences

"Synthesis and Covalent Hydration of 4H-imidazole Derivatives"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1246-1251

Abstract: The acylation of 1-hydroxy-2,5,5-trimethyl-4-phenyl-3-imidazoline-3 oxide (I) and subsequent heating of the acetyl derivative leads to 2,4,4-trimethyl-5-phenyl-4H-imidazole-1 oxide (II) (L. B. Volodarskiy, et al., KhGS, 1241, 1972). Analogous products are obtained under the same conditions from other 5,5-disubstituted 3-imidazoline-3 oxides. The effect of aqueous alkalis on 4H-imidazole-1 oxides leads to cleavage of the heteroring and the formation of α -acylaminoketone oximes. Some new derivatives of the 4H-imidazole series and their N-oxides have now been synthesized including compounds not containing oxygen, mono and di-N-oxides; their properties have been studied: 2,4,4-trimethyl-5-phenyl-4H-imidazole, 4H-imidazole-3 oxide and 4H-imidazole-1,3 dioxides were synthesized from 1-hydroxy-2,5,5-trimethyl-4-phenyl-3-imidazoline and 3-imidazoline-3 oxide. The effect of hydrogen chloride on these compounds and also on 2,4,4-trimethyl-5-phenyl-4H-imidazole-1 oxide leads to water or alcohol addition products --

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USSR

VOLODARSKIY, L. B., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1246-1251

derivatives of 4-hydroxy-2-imidazolinium chlorides. The synthesis procedures and results are presented for the noted series of compounds, and their ultraviolet, infrared and paramagnetic resonance spectral analyses are discussed.

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Acc. Nr

AP0030541

Abstracting Service:
CHEMICAL ABST. 3-70

Ref. Code

UR 0062

54955v Reaction of pentafluorobenzoyl peroxide with hexafluorobenzene. Kobrina, I. S. (Novosibirsk. Inst. Org. Khim., Novosibirsk, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1969, (11), 2628 (Russ). Unlike the reaction of $(C_6F_5CO_2)_2$ with C_6H_6 (Kobrina, *et al.*, 1968), the reaction with C_6F_6 gave in 30 hr at 80° 50% *p,p'*-bis(pentafluorobenzoyloxy)-1,1',4,4'-tetrahydroperfluorobiphenyl (I), m. $125.5-8^\circ$, whose structure was confirmed by NMR and ir spectra. Also formed were isomers of this compd. along with 5-7% decafluorobiphenyl, 3-5% pentafluorophenyl pentafluorobenzoate. Hydrolysis of I in dioxane-HCl-H₂O gave $C_6F_5CO_2H$ and C_6F_5OH .
G. M. Kosolapoff

AA9046975

CHEMICAL ABST. 10-69

UR 0482

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R001401410010-9

80937q 3,3',4,4'-Tetraaminohexafluorodiphenyl ether. Kobson, G. G.; Kobrina, I. S.; Furin, G. G. (Novosibirsk. Institute of Organic Chemistry) U.S.S.R. 242,807 (Cl. C 07), 05 May 1969, Appl. 01 Dec 1967; From *Otkrytiya, Izobret.*, 05 May 1969, Appl. 1969, 46(16), 32. The title compd. is prepd. by treating 4,4'-diamino-octafluorodiphenyl ether with H_2O_2 in the presence of CH_2Cl_2 and trifluoroacetic acid anhydride during boiling. 4,4'-Dinitro-octafluorodiphenyl ether is treated with NH_3 in Et_2O . The formed 3,3'-diamino-4,4'-dinitrohexafluorodiphenyl ether is reduced with Fe filings in alc. in the presence of NH_4Cl .
MQCL

MX

1944

1859

7

AP9052915

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 93-99

T. A. Babushkina, A. P. Zhukov,
L. S. Kobrina, G. K. Semin, G. G. Yakobson

NUCLEAR QUADRUPOLE RESONANCE IN HALOBENZENES
5. NQR-Spectra of Cl^{35} and Br^{79}
in Halogenated Phenols and Anisoles

It has been shown the possibility of the calculation of NQR frequencies of the
base of the experimental spectra.

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19

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1949 1614

7

Acc. Nr:

AP0053773

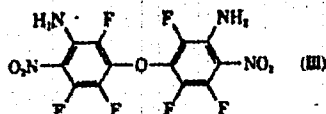
Abstracting Service:

CHEMICAL ABST.

Ref. Code:

UR0366

110946g Aromatic fluoro derivatives. XXXVIII. Derivatives of polyfluorodiphenyl ether. Kobzina, L. S.; Furin, G. G.; Yakobson, G. G. (Novosibirsk. Inst. Org. Khim., Novosibirsk, USSR). *Zh. Org. Khim.* 1970, 6(2), 340-5 (Russ). The reaction of $(C_6Cl_5)_2O$ with KF in an autoclave did not give the expected $(C_6F_5)_2O$; only C_6F_5 , C_6F_5Cl , $C_6F_4Cl_2$, $C_6F_3Cl_3$, and $C_6F_2Cl_4$ were obtained. The same products were obtained from C_6Cl_5 . The reaction of $C_6F_5NO_2$ with 2,3,5,6,4-F₄XC₆OK (X is Me, H, Br, CF₃, NO₂) gave 46-80% 2,3,5,6,4-F₄XC₆OC₆(NO₂)-F₄-4,2,3,5,6 which were reduced to the corresponding amino-derivs. The amino derivs. were aminated to diamino ethers. The oxidn. of 4,4'-diaminooctafluorodiphenyl ether (I) with CF₃-CO₂H gave 4,4'-dinitrooctafluorodiphenyl ether (II), which was reacted with NH₃(g) to the 3,3'-diamino analog (III) of II. The redn. of III gave 3,3',4,4'-tetraaminohexafluorodiphenyl ether.



4-Bromononafluorodiphenyl ether or 4,4'-dibromooctafluorodiphenyl ether were also prepd. from 4-aminononafluorodiphenyl or I, resp., via the Sandmeyer reaction.

CPJR

REEL/FRAME
19830836

USSR

UDC 615.373.576.851.315.098.31].015.4:612.111

SOLOV'YEV, V. D., KOBRINSKIY, G. D., DOMARADSKIY, I. V., LAVRUSHKO, V. S.,
LOBANOV, V. V., BICHUL', K. G., GAL'TSEVA, G. V., RASSUDOV, and PUSHNITSA, N. P.,
Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical
Sciences USSR, and Rostov-on-Don Antiplague Institute

"Effect on Erythrocytes of the Receptor-Destroying Enzyme from Filtrates of
Cholera Vibrio Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 42-46

Abstract: Erythrocytes treated with filtrates of cholera vibrio cultures lose
their capacity for agglutination by certain viruses. The authors studied this
phenomenon of the "receptor-destroying enzyme" (neuraminidase) to determine
the possibility of using it as an aid in diagnosing cholera. In in vitro exper-
iments with guinea pig erythrocytes, filtrates of classic NAG, and El Tor
vibrio cultures prevented the cells from being agglutinated by swine influenza
virus, whereas filtrates of the control cultures (Comamonas, Pseudomonas, and
E. coli) did not do so. The same effect was observed in the case of erythrocytes
from the intestinal contents of suckling rabbits infected with various cholera
vibrio strains. An investigation of the intestinal contents of 279 patients

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USSR

SOLOV'YEV, V. D., Zhurnal Mikrobiologii, Epidemiologii i Immunologii, No 10, 1972, pp 42-46

suffering from gastritis, dysentery, and other gastrointestinal disorders with symptoms resembling those produced by El Tor cholera showed that the hemagglutination reaction was negative in 94% of those over 1 year of age and in 46% of the infants.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ROENTGENOLOGICAL INVESTIGATION IN NEOPLASMS OF THE MAMMARY GLAND
-U-
AUTHOR--KOBRINSKIY, V.V. K
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 5, PP 38-43
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GYNECOLOGY, REPRODUCTIVE SYSTEM, RADIOGRAPHY, DIAGNOSTIC
MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1008 STEP NO--UR/0531/70/000/005/0038/0043
CIRC ACCESSION NO--AP0126646
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER DISCUSSES THE RESULTS
OF X RAY INVESTIGATION OF THE MAMMARY GLANDS IN 200 CASES.
RUENTGENOLOGICAL INVESTIGATION OF THE MAMMARY GLANDS IS ONE OF THE
HIGHLY EFFECTIVE, SIMPLE AND ADDITIONAL METHODS WHICH MAKES IT POSSIBLE
DURING POLYCLINICAL EXAMINATION TO ESTABLISH A CORRECT DIAGNOSIS.
FACILITY: KHIRURGICHESKOYE OTDELENIYE BOL'NITSY G.
NOVOZ-KONOMICHESSKOYE DONETSKOY OBLASTI.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OXIDATION OF DIPHENYLMETHANE IN THE PRESENCE OF POLYPHENYLACETYLENE
-U-
AUTHOR--(04)-BERLIN, A.A., ASEYEVA, R.M., YARKINA, V.V., KOBRYANSKIY, V.M.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 241-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BENZENE DERIVATIVE, OXIDATION, ACETYLENE, ORGANIC AZO
COMPOUND, ORGANIC NITRILE COMPOUND, CONJUGATE BOND SYSTEM, ANTIOXIDANT
ADDITIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1620 STEP NO--UR/0195/70/011/001/0241/0244
CIRC ACCESSION NO--AP0112614
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION WAS STUDIED MANOMETRICALLY. POLY(PHENYLACETYLENE) (I) INHIBITS OXIDN. OF PH SUB2 CH SUB2. INTRODUCTION PERIOD OF PH SUB2 CH SUB2 OXIDN. INCREASED LINEARLY WITH I CONCN. ON REACTION WITH FREE RADICALS, ABSORPTION COEFF. OF I DECREASED AT DIFFERENT WAVELENGTHS DIFFERENTLY. BEST INHIBITORS ARE THE PARTS OF I MACROMOL. HAVING EXTENDED CONJUGATION. DURING A REACTION OF I WITH PH SUB2 CH SUB2 THE CONCN. OF PARAMAGNETIC CENTERS IN I DECREASED. ANALOGOUS EFFECTS WERE OBSERVED WHEN I WAS KEPT IN THE PRESENCE OF AZOBISISOBUTYRONITRILE IN THE ABSENCE OF O. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

AP0027072

NUCLEAR SCI. ABST. 2/70 NE0000

5346 DIVERGENCE CONDITION FOR THE SOFT GRAVI-
TON EMISSION AMPLITUDE. ~~CHEN, Y. I. Yu. Zakharov, V. I.~~
(Inst. for Theoretical and Experimental Physics, Moscow). Phys.
Lett.; 30B: 488-9(24 Nov 1969).

The divergence condition for the graviton inner bremsstrahlung
is used to reconstruct the emission amplitude with the account of
spin dependent terms. (auth)

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19670187

USSR

UDC: 539.293

KOBTSEV, Yu. D., VORONKOV, V. I., ZAPOROZHETS, L. F., Kiev Polytechnical
Institute

"Nonlinear Resistors -- Elastic Films"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika. Resp. Mezhved. Sb.,
No 7, 1972, pp 113-116

Abstract: A method is proposed for making nonlinear resistors in the form of elastic films. The nonlinear current-voltage curves for such resistors based on zinc oxide with a polyvinyl butyral binder are given. The characteristics of films at various ambient temperatures are studied, and it is found that their thermal stability is determined by the choice of organic binder, and that their resistance decreases with increasing temperature. The capacitance of the films is $50-60 \text{ pF}\cdot\text{cm}^{-2}$. The results of the studies showed that the film resistors can be used to good effect in electroluminescent matrix display panels for controlling brightness and contrast.

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USSR

UDC: 539.293

KOBTSEV, Yu. D., VORONKOV, B. I., Kiev Polytechnical Institute

"Using Semiconductor Oxides to Make Nonlinear Resistors"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika. Resp. Mezhd. Sb.,
No 7, 1972, pp 116-121

Abstract: The authors discuss the possibilities for using semiconductor oxides to make nonlinear resistors. An investigation is made into the mechanism of nonlinearity in sintered ceramic systems based on oxides of zinc, tin, and nickel with various dopants used to control the coefficient of nonlinearity. Various semiconductor systems are given together with their coefficients of nonlinearity as a function of sintering temperature. The current-voltage characteristics of the investigated systems are given. The results of the studies show that the coefficient of nonlinearity in such systems can be increased by using dopants whose ion radii are considerably greater than the ion radius of the main component. The technique for making such resistors is extremely simple and requires no expensive materials.

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USSR

UDC 621.316.826

KOBTSEV, Yu. D.

"Nonlinear Semiconductor Elements for Hybrid Solid-State Circuits"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 5, 1971, pp 43-45

Abstract: Controllable resistors made from oxide semiconductors and film thermoresistors with positive temperature coefficients are considered. Possible oxides used include CdO, CuO, and V₂O₅, semiconductors which provide high linearity. Details of the preparation of the semiconductor resistors by the ceramic method are given. Curves are plotted for the resistance of a nonlinear controlled device as a function of the controlling voltage for various frequencies, and for the resistances of film thermoresistors, the VSh25-3 varistor, and the compensated varistor, as functions of the temperature in a range of 0 to 120° C. The author is associated with the Kiev Polytechnical Institute.

USSR

UDC 621.396.6--181.5

KOBTSEV, YU. D.

"Nonlinear Semiconductor Elements For Hybrid Solid Circuits"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhd. sb., 1971, Issue 5, pp 43-45
(from RZh--Radiotekhnika, No 9, Sept 1971, Abstract No 9V325)

Translation: Resistors based on oxide semiconductors and film thermistors with a positive temperature coefficient (thermocompensators) are considered. In the resistors fabricated on the basis of a stoichiometric mixture of oxides of cadmium (or carbonates of cadmium) and copper with an impurity of vanadium pentoxide, nominal values of resistances of 30 ohm--250 kohm are obtained. The coefficients of controllability with respect to the current and voltage at the maximum value of the control voltage are equal, respectively, to 0.56 and 0.54. 4 ill. Summary.

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USSR

UDC: 534.8.081.7

ANDREYEV, G. I., KOBTSOVA, T. Ye., MIROTVORSKIY, V. S., Moscow

"Internal Friction and Heat Release in Structural and Tool Steels in the Presence of Intense Ultrasonic Vibrations"

Moscow, Akusticheskiy Zhurnal, Vol 18, No 3, pp 343-350

Abstract: The paper describes an energy method of determining the internal friction of metals exposed to ultrasonic vibrations with a frequency of the order of 20 kHz at relative deformations of 10^{-4} - 10^{-3} . Internal friction is related to amplitude for commercial iron and for steel grades 30 KhGSA, 40 KhNMA, 50 KhFA, ShKh15 and 3 Kh13 in various states. The heat treatment effect on the damping factor is investigated. The results of studies of ultrasonic heating of metals show that there are amplitude-temperature regions of increased internal friction in commercial iron and grade 50 KhFA steel which are due to the development of slip bands and microstresses in the microstructure. The results of studies of the relation between heat treatment and the damping factor show that the proposed method of analysis may be useful in studying the dislocation nature of plastic deformation and defect accumulation of the fatigue type with high deformation amplitudes.

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USSR

UDC 615.285.7.099

KOKSHAREVA, N. V. and KOBUTUN, S. D., Institute of Toxicology of Pesticides, Polymers and Plastics, Kiev

"Estimation of the Toxicity of the Repellent Benzimine Following Skin Application"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, 1972, pp 46-48

Abstract: To study the toxicity of the 40% solution of benzimine used as a repellent, 0.5 milliliters of a 40% alcohol solution was placed daily on a measured area of the skin of 10 white rats for a period of two months. No local irritation was noted, but significant weight loss after 60 applications was noted in comparison with the control group. No changes were noted in hemoglobin concentration or red or white cell count, although the platelet count and the prothrombin time increased significantly. The cumulation threshold index was lowered, indicating that the preparation was able to cross the blood brain barrier. Urinary sugar and protein were increased. Thus, it was found that commercial as well as laboratory preparations of benzimine may affect various systems, and should be considered as potentially dangerous.

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USSR

UDC: 51.621.391

KOBUCHIYEVSKIY, I. D., MARIN, N. A.

"On the Throughput of Linear Dynamic Systems"

Vladivostok, Inform. metody v sistemakh upr. izmereniy i kontrolya--sbornik (Information Methods in Monitoring and Measurement Control Systems--collection of works), t. 1, 1972, pp 152-157 (from RZh-Matematika, No 10, Oct 73, abstract No 10V415 by Yu. Lin'kov)

Translation: The authors examine a dynamic system described by the linear differential equation

$$\dot{x}(t) = A(t)x(t) + B(t)u(t), \quad 0 \leq t \leq T$$

where $x(t)$ are n -dimensional vector functions (output signals), $u(t)$ are m -dimensional vector functions (input signals), $A(t)$ and $B(t)$ are continuous matrices of size $n \times n$ and $m \times m$ respectively. On the basis of conventional formulas for the ϵ -capacity of compact sets of functions satisfying the Lipschitz condition (RZh-Mat, 1960,5081), formulas are derived for the ϵ -capacity of the set of output signals of the given dynamic system when the input signals are either piecewise-continuous and uniformly bounded in

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USSR

KOBUCHIYEVSKIY, I. D., MARIN, N. A., Inform. metody v sistemakh upr. izmereniy i kontrolya, t. 1, 1972, pp 152-157

a uniform metric, or belong to the space $L_p[0,T]$ and are uniformly bounded in the metric of space $L_p[0,T]$, $p=1, 2$.

2/2

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USSR

KOBUCHIYEVSKIY, I. D. and MARIN, N. A.

"The Throughput Capacity of Linear Dynamic Systems"

Inform. Metody v Sistemakh Upr. Izmereniy i Kontrolya. T. 1 [Information Methods in Testing and Measurement Control Systems. Volume 1 -- Collection of Works], Vladivostok, 1972, pp 152-157 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V415)

Translation: A study is made of a dynamic system described by the linear differential equation

$$\dot{x}(t) = A(t)x(t) + B(t)u(t), \quad 0 \leq t \leq T$$

where $x(t)$ is an n -dimensional vector function (output signals), $u(t)$ are m -dimensional vector functions (input signals), $A(t)$ and $B(t)$ are continuous matrices measuring $n \times n$ and $m \times n$ respectively. Based on known formulas for the ϵ -capacity of compact sets of functions satisfying the Lipschitz condition (RZHMAT, 1960, 5081), formulas are produced for the ϵ -capacity of sets of output signals of the dynamic system studied, when the input signals are either piecewise-continuous and evenly limited in even metrics, or belong to space $L_p[0, T]$ and are evenly limited in the metrics of space $L_p[0, T]$, $p = 1; 2$.

YU. Ilin'kov

AA0046276 -

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1241762 SURFACE ICING DETECTOR consists of in one half of a triode high frequency generator, quartz stabilised in the anode circuit of which is connected to the receiving end of the recorder. In the anode circuit is fitted a resistance R₁ which together with potentiometer R₂ forms the shoulders of bridge with the diagonal connected to relay P₁.

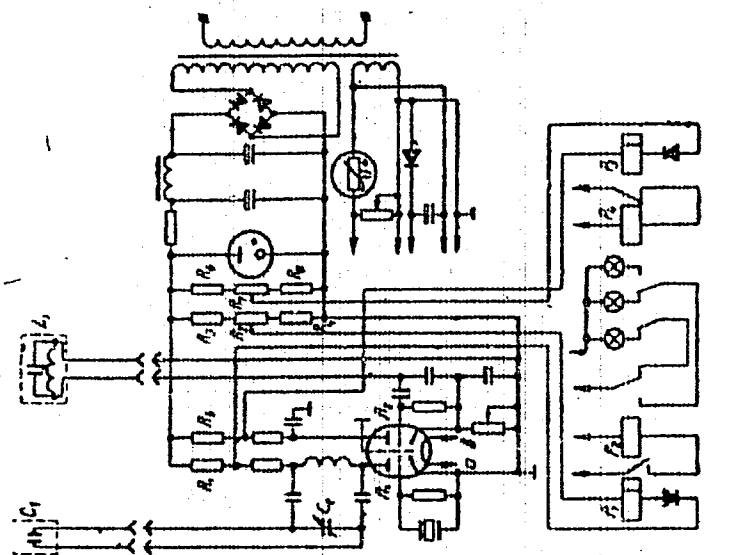
The bridge is balanced by potentiometer R₂ within the generating range.

22.1.68 as 1213144/18-19, G.L. KOBUS et al. (2.9.69)
Bul 14/18.4.69. Class 421. Int. Cl. G 01 k.

AUTHORS: Kobus, G. L.; Soldatov, B. I.; Osadchiy,
A. I.

19781411

AA0046276



AA0040780

KOBYAKOV K.F.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 17

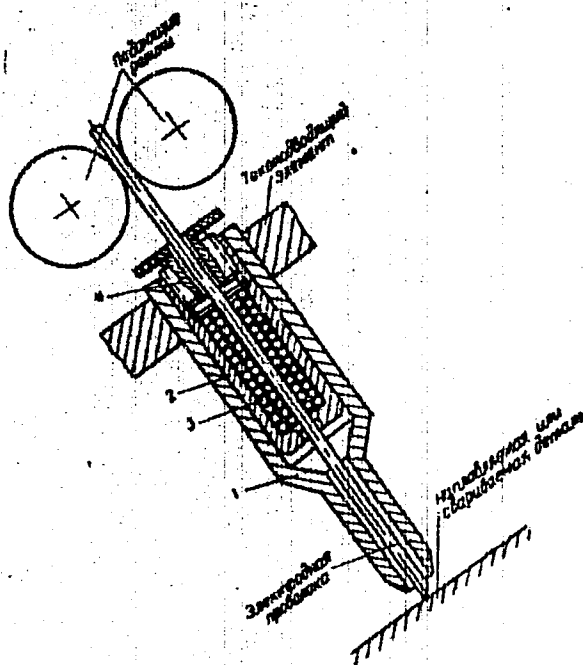
241576 CONTINUOUS WIRE WELDING NOZZLE was fitted with a current carrying element which consists of a tube 2 filled up with balls 3 and top gland 4. The design ensures low friction resistance as the wire passes through the nozzle and good electrical contact of an external conductor and the wire.

30.1.65 as 940379/25-27. V.N.AGAFONOV et al(10.9.69)
Bul 14/18.4.69. Class 21h. Int.Cl.B 23k.

AUTHORS: Agafonov, V. N.; Kobyakov, K. F.; and Kaminskiy, V. A.

18
19750487

AA0040780



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LD

19750488

KOBYAKOVA, A. A.

"One System for Objective Analysis by the Method of Optimal Interpolation"

Tr. Gl. Geofiz. Observ. [Works of Main Geophysical Observatory], No 289, 1971, pp 47-50, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V550 by the author).

Translation: A description is presented of a program for single-level objective analysis on a hemisphere, written in M-220 computer codes. The program realizes one system of the method of optimal interpolation.

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- 72 -

Acc. Nr.

AP0053888

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code

61R0008

116182b Zirconyl chloride hydrates. Spasibenko, T. P.;
Kobycheva, S. A. (USSR). Zh. Neorg. Khim. 1970, 15(2),
847-8 (Russ). The n_D , n_a , and qual. crystallo-optical descrip-
tions of $ZrOCl_2 \cdot nH_2O$, where $n = 8, 7.5, 7, 6.5, 6, 5.5, 4.5$, and
4, are given. HMJR

pc

REEL/FRAME
19830965

18

Powder Metallurgy

UDC 621.762.669. 18.95 4

USSR

PALATNIK, L. S., KAGAN, YA. I., SHILOV, I. F., BELYAYEV, YU. I., BOGDANOVA, A. F., KOBYLEV, P. P., KOLESNIK, B. I., and KUDINOV, D. D., Khar'kov Polytechnic Institute imeni V. I. Lenin

"On the Micro- and Macroheterogeneity of the SAS-1 Alloy"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 22-28

Abstract: A study was made of the physical and chemical heterogeneity of the SAS-1 aluminum sintered alloy. The luminescence method of flaw detection using metallography was employed in the investigation of the physical heterogeneity of the alloy. The nature, dimensions and statistical distribution of pores appearing in the alloy in the process of its production and subsequent treatment were determined. The parameters of the luminescence method were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optimal conditions local pores with dimensions $10 \times 15 \times 25 \mu m$ can be reliably detected. The problems of the appearance of chemical heterogeneity of the alloy in micro- and macrovolumes were considered. Assumptions are advanced whose realization will result in a decreased number of macro- and micro-flaws in the SAS-1 alloy.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHOTOPRODUCTION OF THE NEUTRAL PSEUDOSCALAR MESONS ON NUCLEONS -U-
AUTHOR--~~KOBYLINSKIY, N.A.~~ K
COUNTRY OF INFO--USSR
SOURCE--ITF-70-10, 1970. 15P. DEP. CFSTI
DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--REGGE POLE, MESON, PROTON, NEUTRON, DIFFERENTIAL CROSS
SECTION, ANGULAR DISTRIBUTION, PARTICLE PRODUCTION, PHOTOEFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1918 STEP NO--UR/0000/70/000/000/0015/0015
CIRC ACCESSION NO--AT0127319
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0127319

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. WITHIN THE FRAMEWORK OF A MODEL TAKING INTO ACCOUNT THE CONTRIBUTIONS OF RHO AND OMEGA REGGE POLES OF RHO P AND OMEGA P CUTS, THE PROCESSES OF PHOTOPRODUCTION OF PI PRIMEO, ETA AND X MESONS ON PROTONS AND NEUTRONS WERE CONSIDERED. A NUMBER OF RELATIONS BETWEEN DIFFERENTIAL CROSS SECTIONS OF THE MESON PRODUCTION BY THE POLARIZED AND UNPOLARIZED PHOTONS, ASYMMETRIES IN THE ANGULAR DISTRIBUTION OF MESONS AND POLARIZATIONS OF THE RECOIL NUCLEONS WERE OBTAINED. FACILITY: AKADEMIYA NAUK UKRAINSKOI SSR, KIEV. INSTITUT TEORETICHESKOI FIZIKI.

UNCLASSIFIED

KOBYLAKIN

V.V.

2.

UR 0482

AP0044746

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

241063 TEMPERATURE AND LUMINESCENCE METHOD OF LEAK
DETECTION, for hollow components, can be
applied as a test method for fluid-tightness by
completely filling the component with a luminescent
liquid, for example, a penetrant, sealing it up
and exposing it to UV irradiation. Any leakage of
the penetrant fluid, resulting in gathering of fluid
on the outer surface, will be visually detected by
luminescence. In order to provide excess internal
pressure the component, after filling and sealing is
placed in a heating chamber, for a given time at a
given temperature, to cause volumetric expansion of
the contained detector fluid.
20.3.67 as 1142371/25-28. I.L. LYAPKALO et alia.
DNIIEPROPETROVSK UNIVERSITY. (13.8.69) Bul 13/1.4.69
Class 42k. Int.Cl.G 01n.

MT

21

1/p

19771506

AA0044746.

AUTHORS: Lyapkalo, I. L.; Bantsarevich, V. G.; Belyayev, N. M.; Nerovaya, I. V.;
Slipchenko, V. S.; Kobylkin, V. V.

Dnepropetrovskiy Gosudarstvennyy Universitet

19771507

AP9006826

UR/0343

AUTHORS: Sheruda, S. D.; Zaverbnyy, R. M.; Kobylka, B. N.

TITLE: Investion of the Efficiency of a Unitized Sprayer Pump.

PRIMARY SOURCE: Traktory i Sel'khoz mashiny.

ABSTRACT: Tests were made of the efficiency of a UN-4100 triple-action unitized piston pump in replacing standard-type pumps on the OVS-A, OUT-1A and ON-10 sprayers. A complete description of the UN-4100 pump in comparison with other standard pumps and using a variety of solutions is presented. Specification of the pump are also given. The pump is said to be highly reliable and to have a piston service life of 100—200 hr. Additional investigation using different steels to produce parts of the pump is necessary. Orig. art. has: 2 tables and 4 figures. [BC]

02

1964 0234

USSR

PYATIKOP, P. D., PIROGOV, YU. A., BOLTYANSKIY, A. V., GURSKIY, G. L., KOBYLKO, V. S.

"Phase Composition of Magnesite-Chromite Refractories With Gunit Coatings After Service in the Crown of an Open-Hearth Furnace"

Moscow, Ogneudory, No 3, Mar 70, pp 37-40

Abstract: Guniting the rear walls of open-hearth furnaces at "Zaporozhstal'" plant has increased their life from 180-200 to 500 and more cycles. The rear wall is gunited with a semidry powder mixture at least once per day. The composition of the powder is: 31.5-37.7% Cr_2O_3 , 33.8-42.8% MgO , 0.54-1.6% CaO , 4.7-6.5% Al_2O_3 , 4.2-5.5% SiO_2 , 8.5-10.5% Fe_2O_3 , weight loss 1.7-3.0%. The powder contains not over 7% particles over 1 mm, 20-25% particles less than 0.071 mm. The binder and moistener used is an aqueous solution of liquid glass with a density of 1.17-1.20 g/cm³. The authors studied the chemical and phase compositions of the magnesite-chromite refractories which had

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USSR

PYATIKOP, P. D., et al., Ogneunov, No 3, Mar 70, pp 37-40

been used in the rear line of the crown of an open-hearth furnace operating with oxygen injection. Photographs showing the general appearance and microstructure of the refractories are presented, as well as a graph of the oxide content of the refractories after usage. The guniting of the working surface of the refractories forms a layer of highly refractory materials, protecting the brick from the effects of dust, preventing deep penetration of silicate melts into the cold zones of the brick, and consequently decreasing the rate of conversion of the brick and the intensity of brick wear during service.

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV76
TITLE--PROPERTIES OF THE HYDROGENASE OF NITROGEN FIXING PSEUDOMONAS -U-
AUTHOR--(02)--RASHBA, YE.YA., KOBYLVANSKAYA, YE.G.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 706-8
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PSEUDOMONAS, SOIL BACTERIOLOGY, ENZYME, CULTURE METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1806 STEP NO--UR/0020/70/190/003/0706/0708
CIRC ACCESSION NO--AF0125418

2/2 015

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0125418

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ENZYME FROM A PSEUDOMONAS CULTURE (P. FLUORESCENS, P. RUBIGENOSA, AS WELL AS AZOTOBACTER CHROOCOCCUM, FUSARIUM FLUORESCENS, AND P. TURCOSA) WAS CHARACTERIZED BY ITS ACTIVITY WITH RESPECT TO TETRAZOLIUM SALTS IN VACUO AND IN H₂ ATM., AS WELL AS MANOMETRICALLY AT PH 6.9. ALL PSEUDOMONAS ORGANISMS HAD HYDROGENASE ACTIVITY, BUT THE TETRAZOLIUM SALT METHOD DETECTED THE ACTIVITY IN ONLY 2 CULTURES OF THESE BACTERIA AS WELL AS A. CHROOCOCCUM. THESE ACTIVITIES WERE LOWER THAN FOUND FOR THE SAME CULTURES IN WHICH H₂ CONSUMPTION WAS ESTD. BY THE METHYLENE BLUE METHOD. H₂ AND TETRAZOLIUM ION ADDN. REDUCED THE H₂ CONSUMPTION FROM ENDOGENOUS SUBSTRATES. THE P. TURCOSA CULTURE CONTAINED A WATER SOLUBLE HYDROGENASE SEPARABLE BY AQ. WASHING. FACILITY: INST. MIKROBIOL. VIRUSOL. IM. ZABOLOTNOGO, KIEV, USSR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--NATURE AND FUNCTION OF AMINO ACID RESIDUES OF TRANSKETOLASE
ESSENTIAL FOR THE MANIFESTATION OF ITS ACTIVITY -U-
AUTHOR--(02)-KOCHETOV, G.A., KOPYLYANSKAYA, K.R.
COUNTRY OF INFO--USSR
SOURCE--BIOKHIMIYA 1970, 35(1), 3-12
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENZYME ACTIVITY, BIOLOGIC STAIN, INHIBITION, PHOTOCHEMISTRY,
VISIBLE LIGHT, SPECTROPHOTOMETRY, PHOTOOXIDATION, COENZYME, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0641 STEP NO--UR/0218/70/035/001/0003/0012
CIRC ACCESSION NO--AP0117867
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117867

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISIBLE LIGHT IRRADN. OF
TRANSKETOLASE (EC 2.2.1.1) IN THE PRESENCE OF METHYLENE BLUE DESTROYED
ENZYME ACTIVITY. PHOTOINACTIVATION EVIDENTLY DISRUPTED 1 OR SEVERAL
INDIVIDUAL AMINO ACID RESIDUES. RAPID LOSS OF ACTIVITY UNDER MILD
CONDITIONS OF PHOTOIRRADN., SPECTROPHOTOMETRIC STUDIES OF PHOTOOXIDIZED
ENZYMES, AND DEPENDENCE OF THE RATE OF PHOTOINACTIVATION ON PH INDICATED
THAT THESE WERE HISTIDINE RESIDUES. PHOTOINACTIVATION OCCURRED ONLY IN
HOLS. LACKING THE COENZYME THIAMINE PYROPHOSPHATE; HOLOENZYME ACTIVITY
DID NOT CHANGE DURING PHOTOIRRADN. THE AMINO ACID RESIDUES DESTROYED
DURING PHOTOOXIDN. SEEMED TO BE IN THE ACTIVE CENTER AND EVIDENTLY BOUND
THE APOENZYME TO THE COENZYME THROUGH THE PHOSPHATE GROUP OF THE LATTER.
TRANSKETOLASE MAY BE SUPPRESSED BY INORG. PHOSPHATE COMPETITION WITH
COENZYME FOR FUNCTIONAL GROUPS (HISTIDINE RESIDUES) AT THE ACTIVE
CENTER. FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV.,
MOSCOW, USSR.

UNCLASSIFIED

FILE--PHASE COMPOSITION OF MAGNESITE CHROMITE REFRACTORIES WITH GUNITE
COATINGS AFTER SERVICE IN THE ROOF OF AN OPEN HEARTH FURNACE -U-
AUTHOR--(05)-PYATIKOP, P.D., PIROGOV, YU.A., BOLTYANSKIY, A.V., GURSKIY,
G.L., KOBYLKO, V.S.
COUNTRY OF INFO--~~USSR~~

SOURCE--OGNEUPORY 1970, 35(3), 37-40

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OPEN HEARTH FURNACE, SPINEL, OXIDE REFRACTORY, PHASE
COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

COXY REEL/FRA--1996/0875

STEP NO--UR/0131/70/035/003/0037/0040

RC ACCESSION NO--AP0118046

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

IRC ACCESSION NO--AP0118046

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE COATING OF REFRACTORIES GUNITE POWDER OF COMPN. CR SUB2 O SUB3 31.5-7.7, MGO 33.8-42.8, CAO 0.54-1.6, AL SUB2 O SUB3 4.7-6.5, SIO SUB2 4.2-5.5, AND FE SUB2 O SUB3 8.5-10.5PERCENT WAS USED. ON THE BRICKS WITH GUNITE COATINGS AFTER SERVICE IN THE ROOF OF AN OPEN HEARTH FURNACE 4 STRUCTURAL ZONES WERE FOUND: (1) SLIGHTLY CHANGED ZONE, 100-50 MM THICK, (2) THE TRANSITION ZONE, 30-60 MM, (3) WORKING ZONE, 15-25 MM, AND (4) GUNITE COATING ZONE, 20-5 MM. IN THE DIRECTION FROM (1) TO (4) THE CONTENT OF CAO, FEO, FE SUB2 O SUB3 INCREASES WHILE THAT OF MGO AND CR SUB2 O SUB3 DECREASES. THE MAX. SIO SUB2 CONTENT IS FOUND IN (2). (1) SHOWS THE NONUNIFORM GRANULAR STRUCTURE; IT CONSISTS OF PERICLASE (60-70), CR SPINEL (25-30), AND SILICATES (10-12PERCENT). THE PERICLASE (0.2-2.5) AND CR SPINEL (0.5-3.0 MM) GRAINS ARE CEMENTED WITH A FINE GRANULAR MASS. THE SILICATES ARE REPRESENTED BY MONTICELLITE AND RARELY BY FORSTERITE. THE HOMOGENEOUS DISTRIBUTION OF PORES OF THE CRACK FORMS IS OBSERVABLE. (2) IS ANALOGOUS TO (1) ACCORDING TO THE MINERALOGICAL COMPN. BUT IT DIFFERS FROM (1) IN THE FOLLOWING ASPECTS: (1) IT HAS A MORE UNIFORMLY DISTRIBUTED PERICLASE GRAINS, (B) THE PERICLASE GRAINS ARE LARGER, (C) A CONSIDERABLE HIGHER CONTENT (18PERCENT) OF SILICATES IN WHICH MONTICELLITE PREVALIS, (D) THE PRACTICAL ABSENCE OF FINE CRACKS AND ON THE OTHER HAND THE PRESENCE OF LARGE AMT. OF PORES OF SIZES 0.03-1 MM. (3) IS COMPOSED OF SECONDARY SPINEL, CR SPINEL PERICLASE, AND SILICATES. THE SECONDARY SPINELS FORM THE MAIN COMPONENT (63-70PERCENT) WITH BLACK GRAINS 0.05-0.3 MM.

UNCLASSIFIED

3/3 014 UNCLASSIFIED PROCESSING DATE--16 OCT 70
IRC ACCESSION NO--AP0118046
BSTRACT/EXTRACT--THE CR SPINEL AND SECONDARY SPINEL GRAINS ARE IN CLOSE
CONTACT. THE PERICLASE IN THE FORM OF CORRODED GRAINS IS CLOSELY
PERMEATED WITH THE SECONDARY SPINEL INCLUSIONS. SILICATES ARE PRESENT
AS MONTICELLITE AND MERWINITE. ZONE (4) CONSISTS OF SECONDARY SPINEL
(85-8), CR SPINEL (SIMILAR TO 6), AND SILICATES (6-15PERCENT).
FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOR., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.791.3:669.715+669.14.018.8

KOBYLYANSKIY, I. F., KONONENKO, Yu. F., GUSEV, V. R., TSVETKOV, Yu. F.,
OSIPOVA, K. Ya., LEPANOV, N. S., and CHULKOV, Ye. I., Engineers

"Soldering of Aluminum and Its Alloys With Stainless Steel"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 41-44

Abstract: A method has been developed for fluxless soldering allowing firm attachment of aluminum and its alloys to steel for parts and units working at temperatures up to 400°C. The hypoeutectoid alloy produced during soldering greatly limits the formation and growth of the intermetallide layer around the soldered joint due to the high heating rate to 640°C and low force of external clamping of the parts being connected (1 kg/cm²).

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINING THE GENERALIZED ANGULAR COEFFICIENT OF RADIATION
BETWEEN BODIES SEPARATED BY AN ABSORBING AND DISPERSIVE MEDIUM -U-
AUTHOR-(02)-SURINOV, YU.A., KOBYSHEV, A.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR: ENERGETIKA I TRANSPORT, NO
1, 1970, PP 101-114
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ANGULAR DISTRIBUTION, RADIATION INTENSITY, PARTICLE
ABSORPTION, S MATRIX, INTEGRAL FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1326

STEP NO--UR/0281/70/000/001/0101/0114

CIRC ACCESSION NO--AP0123284

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0123284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW ANALYTIC METHOD IS PROPOSED FOR DETERMINING GENERALIZED LOCAL Ψ (M SUBI, F SUBK) AND INTERMEDIATE Ψ SUBIK FOR THE ANGULAR COEFFICIENTS OF RADIATION. THE PRESENCE OF AN INTERMEDIATE ABSORBING AND DISPERSIVE MEDIUM IS CONSIDERED. THE METHOD IS BASED ON THE APPLICATION OF STOKES' THEOREM. THE METHOD MAKES IT POSSIBLE TO CONVEY THE LOCAL ANGULAR COEFFICIENT OF RADIO Ψ (M SUBI, F SUBK) FROM THE DF SUBMI AREA TO THE ARBITRARY SURFACE F SUBK AS THE SUM OF TWO INTEGRALS (CONTOUR AND SURFACE). A REPRESENTATION IS GIVEN OF THE Ψ (M SUBK, F SUBK) OPTICO GEOMETRIC VECTOR OF RADIATION AS THE SUM OF THE CURL OF A CERTAIN SOLENOIDAL VECTOR TERMED AS THE GENERALIZED OPTICO GEOMETRIC VECTOR POTENTIAL OF RADIATION AND S FUNCTION GRADIENT. GENERALIZED RADIATION POTENTIAL HAS BEEN INTRODUCED AS THE TERM FOR THE S FUNCTION.

UNCLASSIFIED

USSR

UDC 517.917

KOBYSHV, V. A.

"On the Existence of a Solution, Periodic With Respect to x , of a System With a Cylindrical Phase Surface"

Tr. Mosk. ekon.-statist. in-ta, Fiz.-mat. n. (Works of Moscow Economic-Statistics Institute, Physicomathematical Sciences), 1970, Part 1, pp 108-113
(from RZh-Matematika, No 4, Apr 71, Abstract No 4B210)

Translation: Conditions are shown which ensure the existence, in a cylindrical phase plane, of the equation

$$x'' + f(x)x' + g(x) = 0,$$

where f and g are 2π -periodic functions of limit cycles occupying a cylinder.
N. Rozov.

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- 4 -

USSR

UDC 669.017...539.6.001.5

NIKITIN, V. N., LITVINENKO, D. A., and KOPYZEV, V. K.

"Low-Alloy Steel With Increased Brittle Rupture Resistance at Low Temperatures"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 197-199

Translation: It is demonstrated that a steel alloyed with 0.07-0.16% Al with addition of titanium has increased resistance to brittle rupture at low temperatures in comparison with low-alloy structural steels.

In the normalized state, the steel had $\sigma_b \geq 510 \text{ Mn/m}^2$ (51 kg/mm²; $\sigma_T \geq 370 \text{ Mn/m}^2$ (37 kg/mm²; $\delta_5 \geq 24\%$ and impact toughness at -60°C $a_H \geq 400 \text{ kJ/m}^2$ (5 kg·m/cm²).

The steel is strong down to -70°C in the normalized state, and only when rolled to 25 mm thickness is thermal improvement (hardening + high-temperature tempering) required. 4 figures; 3 tables.

USSR

UDC 621.382.9

KOBYZEV, V.N., TAGER, A.S.

"Current Instability And Microwave Emission Of n-CdHgTe"

Pis'ma v ZhETF (Letters To The Journal Of Experimental And Theoretical Physics), 1971, 14, No 3, pp 164-168 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B400)

Translation: High-frequency current instability and microwave emission are detected in the 1.5--5 GHz frequency band in monocrystalline n-Cd_{0.25}Hg_{0.75}Te. Single crystals of CdHgTe with dimensions 2.5 x 2 x 0.1 cm³ with an electron concentration of 10¹⁵--10¹⁶ cm⁻³ and a mobility $\approx 3 \cdot 10^4$ cm²/v.sec were used for the investigation. It is shown that the microwave emission appears with voltages of the electrical field > 100 v/cm and current densities of (1 - 2) $\cdot 10^2$ a/cm², both in magnetic fields with a strength up to 6 kilogauss and without a magnetic field. In regions of the field not exceeding by far the thresholds, the microwave emission is close to coherent and has a characteristic "multimode" [mnogomodovyye] structure. The frequency of the coherent emission depends on the current density, the strength of the magnetic field, the orientation of the specimen, and the pulse duration. It is assumed that an instability of the electron-hole plasma lies at the base of the mechanism of microwave emission in CdHgTe as is also the case of InSb. A. Ye.

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USSR

UDC 621.039.534.44:620.193.23

MARTYNOVA, O. I., NAZAROV, A. I., CHECHETKIN, Yu. V., KOBZAR', I. G.,
SAMOYLOV, Yu. F., and PETROVA, T. I.

"Transition of Zinc Corrosion Products From Boiling Water Into Steam and
Distribution of the Active Component on the Circuit of the VK-50 Boiling
Water Reactor"

Moscow, Atomnaya Energiya, Vol 29, No 2, Aug 70, pp 82-86

Abstract: Values are presented for the distribution coefficient (K_d) of Zn corrosion products at 180 atm (355°C) and 100 atm (310°C) and are compared with experimental data of the visible Zn distribution coefficient in the VK-50 boiling water reactor according to measurements with the Zn^{65} isotope. Insofar as K_d ($K_d = 11.6$ at 70 atm) and the half-life of Zn^{65} ($T_{1/2} = 245$ days) are very high, the Zn^{65} activity is assumed to represent the principal part of the activity of corrosion products in the steam-condensate cycle of the VK-50 reactor. This is shown from data on the activity of several blocks of the steam-condensate cycle. Steam washing and replacing brass parts in the turbine condenser and preheaters with parts made from other alloys are considered effective means for reducing Zn activity.

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USSR

UDC 532.517

MILLIONSHCHIKOV, M. D., Academician, SUBBOTIN, V. I., Corresponding Member of the Academy of Sciences USSR, IBRAGIMOV, M. KH., TARANOV, G. S., and KOBZAR', L. I.

"Experimental Study of Turbulent Flow in Pipes With Artificial Wall Roughness"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1292-1295

Abstract: The authors studied turbulent flow in circular pipes with regular, artificially created wall roughness. The roughness was created by cutting single and multiple cross threads and circular recesses on the inside surface of Duralumin pipes. There were 15 variants. The experiments were conducted in air ($Re = 5000-200,000$) and water ($Re = 70,000-1 \cdot 10^6$). It was found that the dependence of the resistance coefficient on the Reynolds number for the investigated types of rough surfaces differs from the relations obtained for sand-grain roughness or for commercial rough pipes. There was found to be an earlier hydraulic appearance of roughness. In most cases this effect occurs at $u_* k / \nu < 3$, where u_* is the dynamic velocity, k the height of the roughness elements, ν the fluid viscosity. At Reynolds numbers ranging

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MILLIONSHCHIKOV, M. D., et al., Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1292-1295

up to 10^6 practically no interval is observed where a square resistance law would occur, in which λ for one and the same type of thread is determined only by the relative roughness height. The mean relative height of the roughness elements is far from being the complete characteristic of a rough surface. The resistance coefficient is considerably influenced by the pitch of the mutual arrangement of the roughness elements and their shape. Further studies are under way to determine the mechanism of the interaction between turbulent flow and roughness elements and to obtain generalizing relations and develop calculation procedures.

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USSR

UDC. 532.517

MILLIONSHCHIKOV, M. D., Academician; SUBBOTIN, V. I., Corresponding Member USSR Academy of Sciences; IBRAGIMOV, M. Kh.; TARANOV, G. S.; KOBZAR', L. L.

"Experimental Investigation of the Turbulent Current in Tubes With Artificially Roughened Walls"

Moscow, Doklady Akademii Nauk SSSR, vol 207, No 6, 1972, pp 1292-1295

Abstract: Asserting that the experimental and theoretical work on tubes with roughened walls lags behind similar analysis of currents in tubes with smooth walls, the authors describe experiments they performed to investigate turbulent flow in circular tubes of accurate design and with artificially roughened walls, the latter being created by cutting the inner surfaces of the duralumin with grooving and threading devices. The method of cutting is described in some detail, and a table of variants of these roughened tubes, showing diagrams of the cuts and their parameters, is given. The experiments were conducted with air and with water, the Reynolds numbers for each varying from 5000-200,000 and 70,000- $1 \cdot 10^6$ respectively. Curves for the resistance of the tubes with various

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MILLIONSHCHIKOV, M. D., et al, Doklady Akademii Nauk SSSR, vol 207, No 6, 1972, pp 1292-1295

types of cut along the inner walls are plotted. The authors recommend further research to help clarify the mechanism of current and wall interactions.

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USSR

GRIBOV, V. N., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences USSR, and Institute of Theoretical and Experimental Physics, State Committee for the Use of Atomic Energy; MUR, V. D., Moscow Engineering-Physics Institute, and Institute of Theoretical and Experimental Physics, State Committee for the Use of Atomic Energy; KOBZAREV, I. YU., OKUN', L. B., and POPOV, V. S., Institute of Theoretical and Experimental Physics, State Committee for the Use of Atomic Energy

"Properties of Amplitudes With Logarithmically Increasing Interaction Radius"

Moscow, Yadernaya Fizika, Vol 13, No 3, Mar 71, pp 670-680

Abstract: A previous article by the authors considered the elastic scattering amplitudes of the particle $F(s,t)$ and antiparticle $\bar{F}(s,t)$ for the case in which the Pomeranchuk equality is violated:

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USSR

GRIBOV, V. N., et al., Yadernaya Fizika, Vol 13, No 3, Mar 71, pp 670-680

viz., given $s \rightarrow \infty$ the total cross-sections of the interaction with a given target for the particle and antiparticle are constant and do not equal each other

$$\sigma, \bar{\sigma} = \text{const}, \quad \sigma \neq \bar{\sigma}.$$

An analysis was given of so-called self-similar modes in which the behavior of the amplitudes, in essence, is determined by a single variable $\tau = \rho_0 \xi_q$; where $\xi = \ln s$, q is the momentum transfer ($t = -q^2$), and ρ_0 is the length dimensionality param-

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GRIBOV, V. N., et al., Yadernaya Fizika, Vol 13, No 3, Mar 71, pp 670-680

eter; and it was shown that the imaginary part of the crossing-antisymmetric amplitude is an alternating function of its arguments ξ and q . The present article considers limitations which are imposed on the amplitude by analyticity and unitarity in the case of constant total cross-sections, as well as those that vary with energy, without any assumption of self-similarity. It is shown that a number of amplitude properties established in the earlier article, particularly the sign alternation of the imaginary part of the crossing-antisymmetric amplitude, obtain even without the assumption of self-similarity. Modes are considered in which the characteristic impact parameters ρ increase with increase in energy (the Pomeranchuk equality is violated, given $\rho \sim \rho_0 \xi$), with a discussion only of those ρ and q for which $\rho/\rho_0 \gg 1$ and $q\rho_0 \ll 1$.

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GRIBOV, V. N., et al., Yadernaya Fizika, Vol 13, No 3, Mar 71,
pp 670-680

The authors thank A. A. ANSEL'M, G. S. DANILOV, I. T.
DYATLOV, G. T. ZATSEPIN, B. L. IOFFE, A. B. KAYDALOV, and YE. M.
LEVIN for useful discussions.

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USSR

GRIBOV, V. N., KOBZAREV, I. YU., MUR, V. D., OKUN', L. B., POPOV, V. S.

"On the Properties of Amplitudes Not Satisfying Conditions of the Pomeranchuk Theorem"

Moscow, Yadernaya Fizika, Vol 12, No 6, Dec 70, pp 1271-1285

Abstract: The properties of amplitudes violating the Pomeranchuk equality

$\sigma = \bar{\sigma}$, where σ and $\bar{\sigma}$ are the total cross sections for particles and antiparticles respectively, are investigated. It is shown that in the case of constant asymptotic ($s \rightarrow \infty$) cross sections both the crossing-antisymmetric and the crossing-symmetric parts of the amplitude must have a radius that increases logarithmically with energy. Then $a_{\rho}(\xi)$, the imaginary parts of partial waves of the S -channel with negative sign, must be an alternating function of its arguments $\xi = \ln s$ and the impact parameter ρ . Therefore $a_{\rho}^*(\xi)$, the imaginary parts of the crossing-symmetric partial amplitudes cannot be proportional to $a_{\rho}(\xi)$ and must be selected in such a way as to ensure S -channel unitarity. The properties

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GRIBOV, V. N., et al., Yadernaya Fizika, Vol 12, No 6, Dec 70, pp 1271-1285

of amplitudes violating the equality $\mathcal{S} = \bar{\mathcal{S}}$ are analyzed using the example of the so-called automodeling partial amplitudes, which are a function of one variable $\mathcal{X} = \rho/\xi$. The general form of these amplitudes, their crossing properties, and the question of \mathcal{S} -channel unitarity and their dependence on the angular momentum j in the t -channel are discussed. Certain examples of automodeling functions are given.

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1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REGENERATION OF K PRIMEO MESONS AND THE POMERANCHUK THEOREM -U-
AUTHOR-(03)-GERSHTEIN, S.S., KOBZAREV, I.YU., OKUN, L.B.
COUNTRY OF INFO--USSR
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 75-80, JAN. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--K MESON, ENERGY SPECTRUM, DIFFERENTIAL CROSS SECTION
CENTRL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1746 STEP NO--US/C000/70/011/001/0075/0080
CIRC ACCESSION NO--AP0133651

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NOTES THAT THE HYPOTHESIS SIGMA
SUBKN SIGMA SUBKN EQUALS CONST NOT EQUAL TO 0 AS E YIELDS INFINITY LEADS
TO A NUMBER OF DISTINCT PREDICTIONS PERTAINING TO K PRIMEO MESON
REGENERATION.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--REGENERATION OF K PRIME MESONS AND THE POMERANCHUK THEOREM -U-
AUTHOR-(03)-GERSHEYN, S.S., KOBZAREV, I.YU., OKUN, L.B.
COUNTRY OF INFO--USSR
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 75-80
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--K MESON, NUCLEON INTERACTION, HIGH ENERGY PARTICLE, PARTICLE
FORMATION, PARTICLE CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0666

STEP NO--UR/0386/70/011/001/0075/0080

CIRC ACCESSION NO--AP0105642

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105642

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. AIMED AT DETG. THE REGENERATION AMPLITUDE OF K MESONS AT ENERGIES UP TO 6 GEV ARE RECOGNIZED AS THE CLUE FOR TESTING THE HYPOTHESIS THAT THE CROSS SECTION DIFFERENCE FOR THE KN AND BAR K N DOUBLETS SHOULD BE A CONST. DIFFERENT FROM ZERO WHEN E YIELDS INFINITY. POMERANCHUK'S THEOREM WOULD NOT BE VIOLATED IF THE HYPOTHESIS WERE SHOWN TO BE TRUE (I. YA. POMERANCHUK, 1965).

UNCLASSIFIED

USSR

GERSHTEYN, S. S., KOBZAREV, I. YU. and OKUN', L. B.

"Generation of K^0 -Mesons and the Pomeranchuk Theorem"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1,
5 Jan 70, pp 75-80

Abstract: Data obtained at Serpukhov showing that the cross sections for K^- -mesons are constant in the interval 20-55 GeV/c and obtained earlier at Brookhaven showing that the cross sections for K^+ -mesons are constant in the interval 6-20 GeV/c do not contradict the hypothesis that K^+ cross sections would pass to a constant asymptotic limit above 6 GeV/c and that K^- cross sections would pass to a limit above 20 GeV/c, so that as $E \rightarrow \infty$:

$$\sigma_{K^-p} - \sigma_{K^+p} = 3,5 \pm 0,5 \text{ mbarn} \quad \sigma_{K^-d} - \sigma_{K^+d} = (6 \pm 1) \text{ mbarn}$$

$$\sigma_{K^-n} - \sigma_{K^+n} = 2,5 \pm 1,5 \text{ mbarn}$$

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GERSHTEYN, S. S., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 75-80

If this were so, the Pomeranchuk theorem (ZhETF, Vol. 34, 1958, p 725), according to which $\sigma = \bar{\sigma}$ as $E \rightarrow \infty$, would be violated. It turns out that the data of these two experiments do not in any way prove that the cross sections σ_{K^+p} and σ_{K^-p} actually pass to their asymptotic constant limits. In particular, it is possible that the cross section σ_{K^+p} begins to rise beginning with 20 Gev and approaches σ_{K^-p} . As for σ_{K^-p} , in the region $E = 20$ Gev it can be approximated within the existing error not only by a horizontal line but by a curve that drops slowly with the growth of energy and also by a curve having a minimum. The purpose of this work is to note that the hypothesis that $\sigma_{KN} - \sigma_{\bar{K}N} = \text{const} \neq 0$ as $E \rightarrow \infty$ leads to several clear predictions relative to the regeneration of K^0 -mesons. If the experiments do not contradict these predictions, it will mean that the hypothesis is incorrect. This paper was delivered at a conference on high-energy physics in Kiev on 22 December 1969.

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USSR

UDC: 62-531

NOVOSELOV, B. V., ~~KOBZEV, A. A.~~, GOROKHOV, Yu. S., BALABOLOV, G. A.
and POTAPOV, A. M.

"Servo System of Combined Control"

USSR Author's Certificate No 280613, filed 30 May 69, published
1 Dec 70 (from RZh-Avtomatika, telemekhanika i vychislitel'naya
tekhnika, No. 12, 1971, Abstract No 12A167P)

Translation: The proposed device is distinguished from the known ones by its additional self-tuned block, whose output is connected to the inputs of both differentiators, one of the inputs being tied directly to the output of the first differentiator, the other being connected through a switch. Also, the system differs in that there is an additional connection to the output of the compensating device of the second low-frequency filter, and connected to its output is a third differentiator whose output is joined to the input of the switch; there is also a connection between the second differentiator of the compensating device and a relay block, with still another differentiator connected to its input. The differentiator input is tied to the output of the first differentiator. Resume

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USSR

UDC 62-531

NOVOSELOV, B.V., KOBZEV, A.A., GOROKHOV, Yu.S.

"Combines Tracking Drive"

USSR Authors' certificate, 21c, 46/50 (G05f), No 259227, Filed 22/06/68,
Published 6/05/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, 1971, Abstract No 1A280P)

Translation: A combined tracking drive is suggested which contains a base loop with a comparison element; a primary self-tuning loop with a differentiator connected to the output terminal; a multiplier, integrator, and comparison element; a second self-tuning loop with an integrator and multiplier, the input of which is connected to the comparison element of the base loop; and a relay unit. In order to minimize the mean square error in processing a suddenly shifting signal, a signal changing with constant rate and acceleration, or a sinusoidal signal at various frequencies, two series-connected differentiators, a dividing device, root extraction device, second relay unit, integrator, multiplier, and adder are included, connected to the input

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USSR

NOVOSELOV, B.V., et al., USSR Authors' certificate, 2lc, 46/50 (G05f), No 259227, Filed 22/06/68, Published 6/05/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, 1971, Abstract No 1A280P)

of the base loop, with the input of the integrator connected to the output of the comparison element of the base loop; the input of the first additional differentiator is connected in parallel to the differentiator of the first self-tuning loop, the first relay unit, the divider, the multiplier of the first self-tuning loop, and the adder of this loop, connected to the base loop; the input of the second additional differentiator is connected to the second relay unit and the inputs of the additional multiplier and adder; the output of the second additional differentiator is connected to the second input of the first relay unit and the integrator of the second self-tuning unit; the output of the root extracting device is connected to the third input of the first relay unit, which is connected to the integrator of the first self-tuning loop.

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USSR

UDC: None

KOBZEV, A. P., MIKHALYAK, S., RUTKOVSKI, Ye., and FRANK, I. M.

"Optical Radiation Excited by Nonrelativistic, Charged Particles on Metal Surfaces"

Moscow, Yadernaya Fizika, vol 15, No 2, 1972, pp 326-333

Abstract: The phenomenon of radiation in the visible and ultra-violet ranges of the spectrum from metal surfaces excited by charged particles has been observed in experiments in which silver, gold, and aluminum targets were bombarded by protons with energies of up to 4.5 Mev, with the radiation observed at an angle of 86° with the normal to the target surface. These results were found to be in agreement with the theory of transitional radiation. The purpose of the present article is to obtain additional arguments for the detection of transitional radiation by comparing measurements made in bombarding the same targets with protons and electrons. The measurements were made using protons at an energy level of 1.5-4.5 Mev, and electrons with levels of 0.5-15 kev. A description of the equipment is

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USSR

KOBZEV, A. P., et al., Yadernaya Fizika, Vol 15, No 2, 1972, pp 326-333

given together with an explanatory diagram, and the method of measurement is explained. The authors conclude that their experiments provide additional proof of the usefulness of the transitional radiation theory.

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USSR

UDC 535.33

AVILOVA, I. V., BIBERMAN, L. M., VOROB'YEV, V. S., ZAMALIN, V. M., KOBZEV, G. A., MNATSAKANYAN, A. KH., and NORMAN, G. E., Institute of High Temperatures of the Academy of Sciences USSR

"Optical Properties of Hot Gases. CO₂ + N₂ Mixture"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 8, No. 1, Jan/Feb 70, pp 1-11

Abstract: Elementary radiation processes associated with the presence of carbon atoms, either free or in molecules, in planetary atmospheres are studied. Certain spectral and integral characteristics of CO₂ and N₂ mixtures are calculated and compared. Particular attention is given to the composition 90% CO₂ + 10% N₂, which approximately corresponds to the atmosphere of Venus according to data from "Venera-4" and "Mariner-5". Computer programs and a computational technique developed earlier by the authors were used to obtain absorption cross sections for processes associated with atomic hydrogen in CO₂ + N₂ mixtures. The absorption cross sections of CN, CO, C₂, and C are given for the temperatures 4000, 8000, and 12,000°K. The degree of blackness ϵ , the Rosseland average A, and the Planck average B were calculated for $T = (6-10) \cdot 10^3$ K and $P = 0.1-10$ at.

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USSR

AVILOVA, I. V., et al, Teplofizika, vysokikh temperatur, Vol. 8, No. 1, Jan/
Feb 70, pp 1-11

A comparison with experimental data showed that the authors' method of tabulating optical properties of hot gases is applicable to $\text{CO}_2 + \text{N}_2$ mixtures and produces satisfactory accuracy. From the gas dynamics aspect, the calculations show that radiation transfer plays a considerable role in entry into planetary atmospheres. It is pointed out that the degree of blackness of the mixture studied here is considerably greater than that of air and that the difference is especially great in relatively low temperatures.

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1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--OPTICAL PROPERTIES OF HOT GASES. CARBON DIOXIDE NITROGEN MIXTURES
-U-
AUTHOR-(104)-AVILOVA, I.V., BIBERMAN, L.M., ZAMALIN, V.M., KOBZEV, G.A.
COUNTRY OF INFO--USSR
SOURCE--TEPLOVIZ. VYS. TEMP. 1970, 8(1), 1-11
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CARBON DIOXIDE, NITROGEN, ABSORPTION COEFFICIENT, ABSORPTION
SPECTRUM, LIGHT ABSORPTION, TEMPERATURE DEPENDENCE, PRESSURE EFFECT,
VENUS PLANET, ATMOSPHERIC OPTIC PHENOMENON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0139 STEP NO--UR/0294/70/008/001/0001/0011
CIRC ACCESSION NO--AP0103818
UNCLASSIFIED

2/2 040

CIRC ACCESSION NO--AP0103818
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

COMPUTER PROGRAMMING PROCEDURE (B., ET AL., 1964; A., ET AL., 1969) WAS
APPLIED TO THE DETN. OF THE ABSORPTION CROSS SECTIONS RELATED TO C ATOMS
IN CO SUB2 PLUS N MIXTS. AND OF THE SPECTRAL AND INTEGRAL
CHARACTERISTICS OF THE CO SUB2 90 PLUS N SUB2 10PERCENT MIXT.
(CORRESPONDING TO THE VENUS ATM.). THE RESULTS ARE PRESENTED OF THE
CALCN. OF SOME PARAMETERS, FOR A TEMP. OF (6-10) TIMES 10 PRIME3
DEGREESK AND A PRESSURE OF 0.1-10 ATM. THE DATA AGREE SATISFACTORILY
WITH MEASUREMENTS. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

UDC 621.791.14:669.14.018.298.3

USSR

RUDAKOV, A. S., Engineer (Chelyabinsk Polytechnical Institute), GURFINK,
B. I., KOBZEV, I. E., Engineers, and YERETNOVA, V. M., Engineer
(Chelyabinsk Tractor Plant imeni V. I. Lenin)

"Friction Welding of Heat-Treated Type-45 Steel"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, p 51

Abstract: For some time, special socket wrenches have been manufactured by butt resistance welding of sockets of type-45 steel to a connecting rod of type-20 steel, followed by heat treatment. In order to make better use of equipment and improve heating and hardening modes, it has been suggested that the sockets be heat treated before being welded to the rod. The sockets are then friction-welded to the rod using a machine developed at the plant. This article presents the results of strength and structural testing of the metal in and around the joints thus produced. The properties are satisfactory.

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1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OIL FREE PUMPING OUT OF LARGE VOLUMES TO 10 PRIME NEGATIVE13 TORR
USING ONLY CRYOGENIC PUMPS -U-
AUTHOR--(03)-YEFEROV, V.B., KOBZEV, P.M., GLASOV, B.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. TEKH. FIZ. 1970, 40(3), 592-9
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--VACUUM PUMP, CRYOGENIC PUMP, SORPTION, HELIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1554 STEP NO--UR/0057/70/040/003/0592/0599
CIRC ACCESSION NO--AP0118537
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OIL FREE EVACUATION OF AN 800-L. VOL. FROM ATM. PRESSURE WAS STUDIED. AFTER 2 HR THE VOL., ENCLOSED BY WALLS HAVING A TEMP. OF 50DEGREE SK, WAS EVACUATED TO 10 PRIME NEGATIVE 13 TORR; THE PRESSURE IS REACHED BECAUSE OF THE ADSORPTION OF THE HE ON LAYERS ON CONDENSED GASES AND VAPORS. INSIDE THE CRYOPANELS HAVING A TEMP. OF 20DEGREE SK, A PRESSURE OF 6 TIMES 10 PRIME NEGATIVE 11 TORR WAS REACHED AFTER 1.5 HR. THE HERMETIC SEALING OF THE VOL. IS NOT NECESSARY TO ACHIEVE THESE PRESSURES IF THE VOL. IS SITUATED WITHIN THE MAINTAINED VACUUM. THE RATE OF CRYOSORPTION PUMPING OF HE BY THE CRYOPANEL SURFACE, ON WHICH LAYERS OF AR ARE CONDENSED AT 50DEGREE SK, WAS 10PRIME 5 L.-SEC. THE CONSUMPTION OF ELEC. ENERGY IN KEEPING THE SYSTEM AT 10 PRIME NEGATIVE 13 TORR WAS SIMILAR TO 4 TIMES 10 PRIME NEGATIVE 4 KW HR-L. SEC.

UNCLASSIFIED

USSR

UDC 389.6:65.011.56:681.3.004.14

GUBINSKIY, A. I. and KOBZEV, V. V.

"Standardization of the Accounting of Human Factors at Various Stages of the Development of Control Systems"

Moscow, Nadezhnost' i Kontrol' Kachestva, No 8, 1973, pp 62-70

Abstract: Problems associated with the narrowly technical approach and the system approach to planning are defined at various stages in the development of control systems. It is shown that the solution of purely technical problems is insufficient in developing a control system. Problems pertaining to the accounting of "human factors" are correlated with the stages of planning. Ways of obtaining a practical solution of the problem of taking "human factors" into account are indicated. 1 table. 11 references.

1/1

USSR

UDC 621.376:530.145

YEMEL'YANOV, R. G. and KOBZEV, V. V.

"Super-High Frequency Modulator of Light"

Tr. Mosk. in-ta radiotekhn., elektron. i avtomatiki (Works of the Moscow Institute of Radio Engineering, Electronics and Automation), 1972, vyp.55, pp 200-207 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D206)

Translation: None.

1/1

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USSR

UDC: 621.373.826:621.396

KOBZEV, V. V., TERYAYEV, B. G.

"Interference Resistance of a Binary Laser Communications System With Phase and Frequency Keying of the Light-Beam Carrier"

Tr. Mosk. in-ta radiotekhn., elektron. i avtomatiki (Works of the Moscow Institute of Radio Engineering, Electronics and Automation), 1972, vyp. 64, pp 24-34 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D446)

[No abstract]

1/1

USSR

UDC: 621.378.324+621.378.334

ABRAMOV, V. S., KOBZEV, V. V., MOMA, Yu. A., KEVSKIY, M. V.

"Semiconductor Laser Diode as a Modulator of Gas Laser Emission"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,
pp 96-98

Abstract: Experimental proof is given for the feasibility of modulating gas laser emission by using a semiconductor laser diode with simultaneous amplification of the power of the modulated emission. Argon-oxygen gas laser pulse emission was modulated by a gallium arsenide diode with both coated and uncoated optical faces. The power of the emission passed through the diode increased in the pulse by a factor of 7-10 (pure amplification). Heating of the active region of the diode leads to distortion of the vertex of the modulated pulse. Estimates are made of the limitations on pulse duration due to this effect. One illustration, bibliography of ten titles.

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Acc. Nr.

AP0041538

Abstracting Service:

CHEMICAL ABST.

4/70

Ref. Code

UR 0366

89970y Chemical transformations of α -haloketones. Reaction of ring-substituted phenacyl bromides with sodium methylate. Ternnikova, T. I.; Dneprovskii, A. S.; Barashkin, V. D.; Kobzeva, A. I. (Leningrad Gos. Univ., Leningrad, USSR). *Zh. Org. Khim.* 1970, 6(1), 76-80 (Russ.). The reaction of p -XC₆H₄COCH₂Br (I) with MeONa in MeOH soln. at $\sim 0^\circ$ gave 1,3-bis(p -X-substituted-phenyl)-4-bromo-2,3-epoxybutan-1-one (II) and p -XC₆H₄COCH₂OH (III) (X is H, Cl, or Br). The formation of II proceeds through an intermediate carbanion p -XC₆H₄COC⁻HBr, which condenses with I giving p -XC₆H₄COCHBrC(O⁻)(CH₂Br)C₆H₄X- p (IV). The loss of α -Br⁻ from IV gives II. The formation of III starts with the addn. of MeO⁻ to I giving p -XC₆H₄C(O⁻)(CH₂Br)OMe which is hydrolyzed to p -XC₆H₄C(OMe)₂CH₂OH (V) and converted to III. The ketal V (X = Cl) was isolated. The reaction of I (X = Br) with MeONa in HCONMe₂ gave HCO₂CH₂COC₆H₄-Br- p , which was hydrolyzed easily to III (X = Br). CPJR

REEL/FRAME
19751406

Egorycheva, G. V.; Makarova, I. F.; Aisheva, M. I.; Andrienko, K. A.; Tsyganov, V. I. (Scientific Research Institute of the Technology of the Automotive Industry)
 Brit. 1,177,888 (Cl. B 21c), 14 Jan 1970, Appl. 18 Sep 1968; 2 pp. Binders having several years shelf life, for sand cores hardening in <1.5 min in core boxes heated to 240-60°, are obtained by mixing 60-70 parts sulfite liquor by wt. with 15-30 parts polyat. alc. mother soln. from pentaerythritol production, and adding to the mixt. 8-15 parts of an oxidn. catalyst slowly during 30-60 min with stirring or other means to suppress foam and prevent temps. >60-70°. Suitable sulfite liquor or lye has 1.27 sp. gr. Hydrolysates of corn cobs or sawdust can be substituted for it. Suitable mother soln. contains saccharides 11-13, pentaerythritol 8-12, resins 4-10, acids 2-5, and H₂O 60-75%, and has at least 1.16 sp. gr. The oxidn. catalyst can be H₃PO₄, a persulfate, or H₂O₂, and if the latter, not over 3% of a 30% aq. soln. should be used, with a H₂O-cooling jacket for cooling below 25°. The mixed binder should have 1.25-1.3 sp. gr. and 4-4.8 pH. Cores thus bonded retain useful properties 3-4 days. When they also contain up to 3% clay, hardening is faster than 1.5 min and the core strength is increased 25% or more. The collapsibility of the cores after castings are cooled is not impaired by these binders.
 George F. Comstock

REEL/FRAME

19711247

Acc. Nr.

AA0034551

Abstracting Service:

CHEMICAL ABST. 4-78

Ref. Code

0000

70060e Rapid-drying foundry-core binders from organic by-
products. Borskaya, E. A.; Kobzeva, Z. A.; Zotov, A. B.;
Egorycheva, G. V.; Makarova, L. F.; Kiseleva, M. S.; Kuni-

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN
FROM FERMENTATION BROTH FILTRATES -U-
AUTHOR--(041)-YAKHONTIVA, L.F., BRUNS, B.P., KOBZITEVA, S.N., PEREVOZSKAYA,
N.A.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 411-415
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ION EXCHANGE RESIN, FERMENTATION, CYCLOSERINE, CHEMICAL
SEPARATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1140 STEP NO--UR/0297/70/015/005/0411/0415
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CIRC ACCESSION NO--AP0115159

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN FROM FERMENTATION BROTH FILTRATES IS DESCRIBED. THE METHOD INCLUDES SORPTION OF CYCLOSERIN IN THE CATIONIC FORM BY A STRONG CROSS LINKED SULFOCATION EXCHANGE RESIN (ON THE BASIS OF STYRENE AND DIVINYLBENZOL) IN A SERIES OF COLUMNS. AN AQUEOUS AMMONIA SOLUTION IS USED FOR DESORPTION. CYCLOSERIN IN CRYSTALLIZED FROM ELUATES AFTER THEIR CLARIFICATION, EVAPORATION AND DILUTION OF THE CONCENTRATE WITH ETHYL ALCOHOL. A PRODUCT OF HIGH PURITY IS OBTAINED. FACILITY: NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

USSR

UDC 632.95

VERDEREVSKIY, D. D., VOYTOVICH, K. A., KORBZOV, F. N., KHAKHAM, I. B., and
CHERNAYA, N. S.

"Copper Naphthenate Paste -- a Substitute for Bordeaux Mixture in Controlling
Apple Tree Scab"

Tr. Kishinev. S.-kh. in-ta (Works of Kishinev Agricultural Institute),
1971, 67, pp 32-34 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N431

Translation: In comparative tests, quadruple spraying of an apple orchard with
a 0.6% suspension of copper naphthenate paste was only slightly less effective
against scabs on the fruit and leaves than the same application of a 1%
solution of Bordeaux mixture. P. Popov.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INCREASING THE THERMOOXIDATIVE STABILITY OF SYNTHETIC OILS BY USING
ANTIOXIDANT ADDITIVES -U-
AUTHOR-(02)-KOBZUVA, R.I., TUBYANSKAYA, G.S.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 26-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMAL STABILITY, AMINE DERIVATIVE, SYNTHETIC OIL, ESTER,
GREASE, LUBRICANT ADDITIVE, PENTAERYTHRITOL, ANTIOXIDANT ADDITIVE

CONTROL MARKING--NO RESTRICTIONS.

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1938

STEP NO--UR/0318/70/000/004/0026/0027

CIRC ACCESSION NO--AP0133782

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133782

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYNTHETIC OIL MAS-35 HAD LOW SUSCEPTIBILITY TO ANTIOXIDANT ADDITIVES. FERROCENE, 16-3, AND OTHER SUCH ADDITIVES CONTG. METALS REDUCED THE STABILITY OF THE OIL. THE ADDITIVES INCREASED GREATER THAN 2, AND 3 FOLD AT 200 AND 150DEGREES, RESP., THE STABILITY OF ESTER 2 (ESTER OF PENTAERYTHRITOL) AS A DISPERSION MEDIUM FOR GREASES. THE MOST EFFICIENT ADDITIVES WERE PHENYL, ALPHA, NAPHTHYLAMINE, DISALICYLALETHYLENEDIAMINE, AND DILAURYL SELENIDE.

UNCLASSIFIED